Testimony of Jennifer Gardner, Western Resource Advocates
Presentation to the Utah Public Utilities, Energy & Technology Interim Committee
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Introduction

Good afternoon. My name is Jennifer Gardner and I am a staff attorney with Western Resource Advocates (WRA). WRA is a regional non-profit organization with staff throughout the West, including Utah. With our staff of experienced engineers, policy analysts and attorneys, we work to improve air quality and achieve sustainable management of all Western resources. To this end, we have been heavily engaged in the stakeholder processes related to the formation of a regional system operator (RSO) in the West.

I'd like to start off by explaining what an RSO *is* and conclude by explaining what it *is not,* in order to clarify some misconceptions.

An RSO is a vast improvement on "business as usual" in terms of how our electric grid is operated. An RSO is a means to more efficiently dispatch electric generation needed to power our homes and businesses over a larger operating footprint – an end result that a single utility cannot accomplish on its own.

- ***This saves money by using only the most economically efficient generators available in this expanded footprint.***
- ***It also reduces the amount of "backup" generation each utility needs to meet short-term changes in demand.***
- ***Because of its broad geography, an RSO is also a valuable tool to "average out" the variability we see in wind and solar generation, saving money. This particular benefit is becoming increasingly important as we see companies like Facebook making decisions on where to expand their businesses based on the availability of renewable generation to power their facilities.[1]***

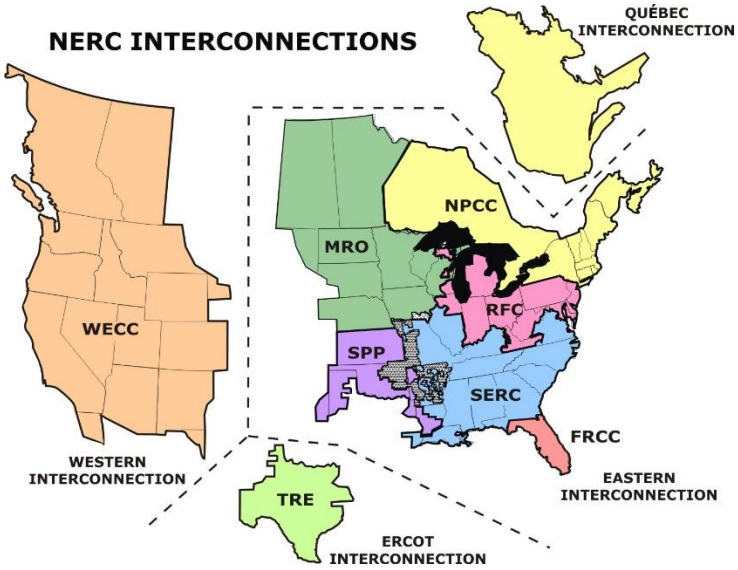
There are other important benefits to an RSO, including improved grid reliability and more efficient use of existing transmission. Improved operating efficiencies like these present one of the most attractive benefits of an RSO – the opportunity to save money.

To best explain how an RSO improves upon "business as usual," it's helpful to clarify what "business as usual" looks like today.

[1] Note that PNM and Rocky Mountain Power have both recently filed rate applications to serve a new Facebook data center, which will be located in one of these two states, but not both. The importance of this development is that Facebook has insisted that the center be sourced with 100% renewable energy. This will initially involve constructing 30 MW of new solar PV. WRA intends to be involved in both cases to facilitate approval of new, enabling rate structures.

First, please turn your attention to Figure 1 in my handout. On the left, you can see the electrically intertwined Western grid, also known as the "Western Interconnection." As you can see, the Western grid is one large integrated network that includes parts of Canada, a small part of Mexico, and all or parts of fourteen Western states. Importantly, due to its interconnected nature, a glitch in any part of this large and complex grid can lead to service interruptions hundreds of miles away.

Figure 1

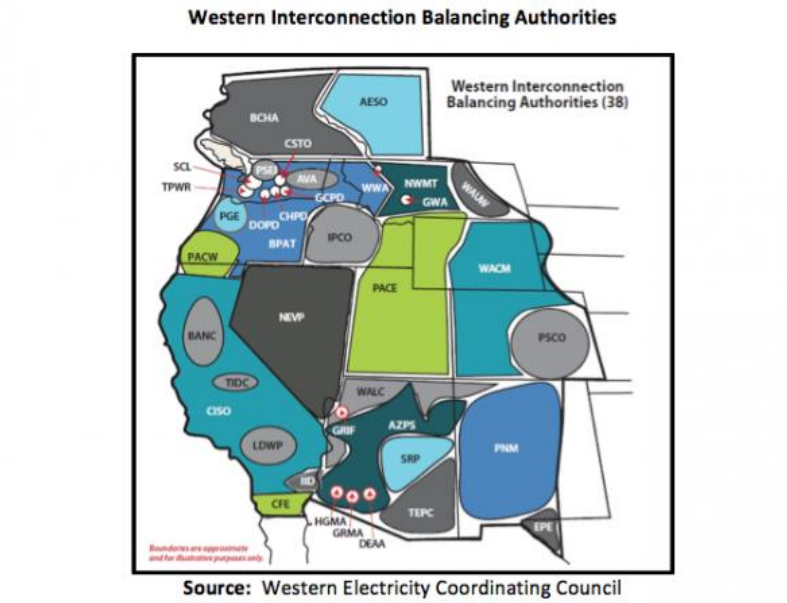


Source: North American Independent System Operator, www.nerc.com

To get even more granular, as you can see in Figure 2, within the Western Interconnection, we have 38 separate entities (also called Balancing Authorities, or BAs) that each have a legal obligation to simultaneously balance the demand and supply of energy within their boundaries. Typically, these BAs are operated by individual utilities. With 38 different "operators" of this giant grid that makes up the Western Interconnection, it is not uncommon to face operating inefficiencies and grid reliability challenges.[2]

[2] Utah is located in what is known as the "PAC East" BA, labeled as "PACE" on your handout. Each of these BA operators dispatches electric generation according to contractual terms (not necessarily in regard to what's most economical). Further, while each of these BAs has a strong understanding of their own operations, their ability to view their neighbors' transactions is typically limited. As a result, energy traders operating within these BAs typically buy and sell electricity in larger quantities than necessary to provide a "cushion" in order to ensure they have enough supply to meet demand and avoid service interruptions, or blackouts. Unfortunately, "business as usual" tends to be neither cost effective nor efficient, as most of these trades are arranged manually – by email or telephone.

Figure 2



Source: Western Electricity Coordinating Council, www.wecc.biz

Through consolidated grid operations, an RSO would essentially remove these virtual BA boundaries and in so doing, increase economic efficiency, reduce costs, and improve grid reliability.[3] As shown in Figure 3, PacifiCorp and the CAISO are exploring a way to capture these benefits by evaluating an RSO that would initially cover their respective territories, but in the future, could possibly cover most or all of the Western grid. You'll notice that this initial RSO footprint almost exactly matches the combined BA footprints of both PacifiCorp (PAC East and West) and the CAISO.

[3] An RSO's grid operator can improve reliability through the use of highly sophisticated software, monitors, and computers. By taking advantage of these technological improvements, a grid operator in an RSO is able to simultaneously view generation levels, power flows across transmission lines, and resource availability across the entire expanded footprint – not just within a specific BA. In the electric power industry, this capability is known as "situational awareness." As a result of this situational awareness, a grid operator is constantly aware of potential trouble on the system before it escalates. And, if a large generating unit or transmission line is lost, the system software automatically re-dispatches electric generation, helping to prevent blackouts. The RSO's automated process, in contrast to today's more manual approach, is not only more cost effective, but more efficient. It dispatches the lowest-cost resources first (thereby helping to reduce power purchasing costs), leverages market and operation efficiencies over a larger geographic footprint, and optimizes transmission project planning. Through situational awareness, it also improves the reliability of our electric grid, reducing the chance of expensive and disruptive blackouts.

Figure 3

Source: California Independent System Operator, www.caiso.com

The cost reductions from this combined operating footprint are not simply theoretical. 21 months ago, PacifiCorp and CAISO took the first step in demonstrating the value of coordinated generation dispatch by forming the Energy Imbalance Market (EIM), which is basically a more limited version of the RSO.[4] Between January 2015 and March of this year, PacifiCorp's savings totaled more than $35M as a result of its participation in the EIM.[5] An RSO will expand on these savings.

If PacifiCorp elects to participate in an RSO, such participation will not change the Utah Public Service Commission's traditional regulatory authority over transmission siting and permitting; resource policy; and retail rates.[6]

(1) *Transmission Siting and Permitting.* Utah Code § 54-4-25 will continue to govern the regulatory process for Certificates of Public Convenience and Necessity (CPCNs), which are a prerequisite to the construction and operation of transmission lines and

[4] The EIM involves PacifiCorp's participation in CAISO's 15-min. and 5-min. markets to better manage short-term fluctuations in energy supply and demand. An RSO would extend this participation to the day-ahead energy market and allow for full coordination of the region's two largest high-voltage transmission grids. PacifiCorp's retail customers in the six states it serves would still receive retail electrical service from Pacific Power and Rocky Mountain Power.

[5] These savings have been calculated using EIM quarterly reports published by the CAISO and available at: https://www.caiso.com/informed/Pages/EIMOverview/Default.aspx.

[6] The Utah Public Service Commission (PSC) was established as an independent agency, empowered with discharging the duties and exercising the legislative, adjudicative, and rule-making powers committed to it by Utah law (Utah Code § 54-1-1). This authority includes supervising and regulating every public utility within the state (Utah Code § 54-4-1). It also includes the authority to issue CPCNs as a prerequisite to the construction and operation of transmission lines and generating plants within the state (Utah Code § 54-4-25).

generating plants within the state. This authority will not be impacted by the RSO and any changes to this legislation must be made by the Utah Legislature.

(2) *Resource Policy.* Each state in which the RSO operates will maintain its existing authority over traditional state matters, such as energy and environmental policy making, resource procurement, and retail rate design.

(3) *Retail Rates.* States within the RSO will continue to have authority over the regulatory mechanisms for passing through wholesale costs to retail customers. Although an RSO will necessitate new processes and procedures, the issues are largely the same, and state regulatory staff should already be well equipped to effectively engage in, and influence, RSO planning processes or any federal proceedings at FERC.

The RSO will not be governed by a California-centric board.

The CAISO is currently governed by a five-member Board of Directors that is appointed by the California Governor and confirmed by the California legislature. Under the current model, this makes sense, as the CAISO operates primarily within the State of California and is a creature of California legislation.[7]

By contrast, an RSO should be governed by a fully independent board that does not serve at the whim of the California Governor or its legislature. Rather, the RSO must be reportable to all states within its footprint. WRA, CAISO and PacifiCorp also strongly support the formation of a separate organization of regulators from Western states to be a part of this new and independent governance structure. In fact, WRA recently filed comments to this effect with the California Energy Commission.[8] This separate organization of regulators would empower participating states at both the RSO and state levels – i.e., they would have authority over matters related to resource adequacy and transmission cost allocation within the context of the RSO; and they would continue overseeing traditional utility regulatory matters within their respective state boundaries.

Importantly, PacifiCorp has also made clear that it will not pursue or request state approval of regional integration unless it believes the structure and processes establishing regional independent governance are acceptable to each of its states.

PacifiCorp's election to participate in an RSO will not happen absent a showing of net benefits.

In April 2015, PacifiCorp and CAISO signed an MOU that committed both parties to exploring the feasibility, costs and benefits of their joint participation in an RSO. An initial study conducted by E3, released last October, found significant gross benefits for both entities that

[7] Note that Valley Electric (located in Nevada) is currently the only non-California entity participating in the CAISO market.

[8] These governance comments are available here: http://docketpublic.energy.ca.gov/PublicDocuments/16-RGO-01/TN212178_20160707T160723_Jennifer_Gardner_Comments_Governance_Comments_of_WRA_WGG_NRDC_U.pdf.

grow over time. In the RSO's first 20 years of operation, E3 estimated benefits in the range of $1.6-$2.3B for PacifiCorp alone.[9] As I stated earlier, these benefits are *in addition to* the benefits PacifiCorp is already realizing from its participation in the EIM.

It's important to remember that we are still in the early stages of analysis. The next step is to evaluate the net benefits of PacifiCorp's participation in an RSO (that is, gross benefits minus costs). The results of a net benefits analysis will be a key factor for state commissions, including the Utah Public Service Commission, to determine whether PacifiCorp's participation in an RSO is in the public interest. PacifiCorp is currently conducting an internal analysis that it has said it will share during the upcoming regulatory proceedings in each of its states. We have asked PacifiCorp to begin now a more public assessment of net benefits so that there can be a more thorough vetting of costs and benefits for all of PacifiCorp's customers and stakeholders.

Conclusion

In conclusion, the majority of utilities in this country operate in "organized" markets like the RSO and are realizing benefits. PacifiCorp has already realized benefits from the limited market operations of the EIM and, under an RSO, has the potential to realize more. In studying the benefits of an RSO, PacifiCorp and the CAISO have done a good job at early analysis and stakeholder engagement. But, there is substantial work left to be done. WRA will continue to be engaged and will be happy to provide members of this Committee with additional input as this process moves forward. Thank you very much for your time.

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[9] The E3 study is available here: http://www.caiso.com/Documents/StudyBenefits-PacifiCorp-ISOIntegration.pdf.